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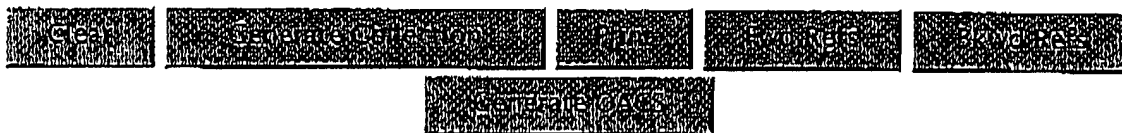
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☐ 1. Document ID: WO 9624198 A1

L3: Entry 1 of 2

File: EPAB

Aug 8, 1996

PUB-NO: WO009624198A1

DOCUMENT-IDENTIFIER: WO 9624198 A1

TITLE: SPECTRUM SPREADING COMMUNICATION DEVICE AND COMMUNICATION SYSTEM

PUBN-DATE: August 8, 1996

INVENTOR-INFORMATION:

NAME

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YUHARA, AKITSUNA

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YAMADA, YOSHIHIRO

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ASSIGNEE-INFORMATION:

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APPL-NO: JP09500129

APPL-DATE: February 1, 1995

PRIORITY-DATA: JP09500129W (February 1, 1995)

INT-CL (IPC): H04 B 1/69

EUR-CL (EPC): H04B001/707; H04J013/00

ABSTRACT:

CHG DATE=19990617 STATUS=O>A structure of a novel spectrum spreading communication device which solves the problem with the conventional spectrum spreading

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communication using Barker codes, etc., and limits the rise of the side-lobe of a correlational signal independently of the order of information codes by use of a code sequence having a code length of at least 14. The spectrum spreading communication device uses a pseudo-noise code having a code length of at least 14 and a self-correlation side-lobe of not greater than 3 as a pseudo-noise code of a direct spreading communication device which uses the pseudo-noise codes whose polarities are inverted so as to deal with also digital information. Thus, even when the pseudo-noise code length is 14 or more, the side-lobe of the correlation coefficient can be restricted. Accordingly, the error rate of the spectrum spreading communication device is reduced and the processing gain is improved.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Claims	MMIC	Draw. D.
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☐ 2. Document ID: WO 9624198 A1, US 6134264 A, JP 08523396 X

L3: Entry 2 of 2

File: DWPI

Aug 8, 1996

DERWENT-ACC-NO: 1996-371703

DERWENT-WEEK: 200054

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TITLE: Spread spectrum communication system - uses pseudo-noise code having length greater than 14, pref. odd number, and auto-correlation side lobe below 3,

INVENTOR: OTA, Y; SHIBA, T ; YAMADA, Y ; YUHARA, A ; OHTA, Y

PATENT-ASSIGNEE:

ASSIGNEE

CODE

HITACHI LTD

HITA

PRIORITY-DATA: 1995WO-JP00129 (February 1, 1995)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>WO 9624198 A1</u>	August 8, 1996	J	079	H04B001/69
<u>US 6134264 A</u>	October 17, 2000		000	H04K001/00
<u>JP 08523396 X</u>	February 24, 1998		000	H04B001/69

DESIGNATED-STATES: CN JP KR US AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE

CITED-DOCUMENTS: 2.Jnl.Ref; JP 03174835?

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
WO 9624198A1	February 1, 1995	1995WO-JP00129	
US 6134264A	February 1, 1995	1995WO-JP00129	
US 6134264A	July 21, 1997	1997US-0875182	
US 6134264A		WO 9624198	Based on
<u>JP 08523396X</u>	February 1, 1995	<u>1995WO-JP00129</u>	
<u>JP 08523396X</u>	February 1, 1995	1996JP-0523396	
<u>JP 08523396X</u>		WO 9624198	Based on

## Record List Display

INT-CL (IPC): H04 B 1/69; H04 K 1/00

ABSTRACTED-PUB-NO: US 6134264A

## BASIC-ABSTRACT:

The system uses a code sequence of pseudo noise with inverted polarities and having a code length of more than 14, and an autocorrelation side-lobe of less than 3 for direct spreading communication. The pseudo noise code is pref. an odd number, e.g. 15, 21, 25 or 27. A filter function is used to reduce the side lobes of the output matching signal obtained after demodulation.

A matched filter is used as a demodulating element. Each tap of the matched filter is weighted. The filter may be a surface acoustic wave filter without polarity inverting electrodes.

ADVANTAGE - Solves problem with conventional spread spectrum communication using Barker codes, etc., and limits rise of side-lobe of correlational signal independently of order of information code error rate. Processing gain is improved.

ABSTRACTED-PUB-NO:

WO 9624198A

## EQUIVALENT-ABSTRACTS:

The system uses a code sequence of pseudo noise with inverted polarities and having a code length of more than 14, and an autocorrelation side-lobe of less than 3 for direct spreading communication. The pseudo noise code is pref. an odd number, e.g. 15, 21, 25 or 27. A filter function is used to reduce the side lobes of the output matching signal obtained after demodulation.

A matched filter is used as a demodulating element. Each tap of the matched filter is weighted. The filter may be a surface acoustic wave filter without polarity inverting electrodes.

ADVANTAGE - Solves problem with conventional spread spectrum communication using Barker codes, etc., and limits rise of side-lobe of correlational signal independently of order of information code error rate. Processing gain is improved.

CHOSEN-DRAWING: Dwg.1/22

TITLE-TERMS: SPREAD SPECTRUM COMMUNICATE SYSTEM PSEUDO NOISE CODE LENGTH GREATER  
PREFER ODD NUMBER AUTO CORRELATE SIDE LOBE BELOW

DERWENT-CLASS: W02

EPI-CODES: W02-C03; W02-G02; W02-K05B1; W02-K05B3; W02-K05B5;

SECONDARY-ACC-NO:

Non-CPI Secondary Accession Numbers: N1996-312663

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	Keywords	Drawings
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13168035

Basic Patent (No,Kind,Date): WO 9624198 A1 19960808 <No. of Patents: 002>

Patent Family:

Patent No	Kind	Date	Applic No	Kind	Date
US 6134264	A	20001017	US 875182	A	19970721
WO 9624198	A1	19960808	WO 95JP129	A	19950201 (BASIC)

Priority Data (No,Kind,Date):

WO 95JP129 A 19950201

PATENT FAMILY:

UNITED STATES OF AMERICA (US)

Patent (No,Kind,Date): US 6134264 A 20001017  
SPREAD SPECTRUM COMMUNICATION DEVICE AND COMMUNICATION SYSTEM (English)  
Patent Assignee: HITACHI LTD (JP)  
Author (Inventor): SHIBA TAKASHI (JP); YUHARA AKITSUNA (JP); YAMADA YOSHIHIRO (JP); OHTA YASUHIRO (JP)  
Priority (No,Kind,Date): WO 95JP129 A 19950201  
Applic (No,Kind,Date): US 875182 A 19970721  
National Class: \* 375150000; 375151000; 375152000; 375153000  
IPC: \* H04K-001/00  
Derwent WPI Acc No: \* G 96-371703  
Language of Document: English

UNITED STATES OF AMERICA (US)

Legal Status (No,Type,Date,Code,Text):

US 97875182	A	19970721	US REF	CORRESPONDS TO PCT APPLICATION (ENTSPRICHT PCT ANMELDUNG)
			WO 9624198	P
US 6134264	P	19950201	US AA	PRIORITY (PATENT)
			WO 95JP129	A 19950201
US 6134264	P	19970721	US AE	APPLICATION DATA (PATENT)
			(APPL. DATA (PATENT))	
			US 875182	A 19970721
US 6134264	P	20001017	US A	PATENT

WORLD INTELLECTUAL PROPERTY ORGANIZATION, PCT (WO)

Patent (No,Kind,Date): WO 9624198 A1 19960808

SPECTRUM SPREADING COMMUNICATION DEVICE AND COMMUNICATION SYSTEM  
(English)

Patent Assignee: HITACHI LTD (JP); SHIBA TAKASHI (JP); YUHARA AKITSUNA (JP); YAMADA YOSHIHIRO (JP); OHTA YASUHIRO (JP)  
Author (Inventor): SHIBA TAKASHI (JP); YUHARA AKITSUNA (JP); YAMADA YOSHIHIRO (JP); OHTA YASUHIRO (JP)  
Priority (No,Kind,Date): WO 95JP129 A 19950201  
Applic (No,Kind,Date): WO 95JP129 A 19950201  
Designated States: (National) CN; JP; KR; US (Regional) AT; BE; CH; DE; DK; ES; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE  
Filing Details: WO 100000 With international search report  
IPC: \* H04B-001/69  
Derwent WPI Acc No: \* G 96-371703; G 96-371703  
Language of Document: Japanese

WORLD INTELLECTUAL PROPERTY ORGANIZATION, PCT (WO)

Legal Status (No,Type,Date,Code,Text):

WO 9624198	P	19950201	WO AE	APPLICATION DATA (APPL. DATA)
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Search

			WO 95JP129 A 19950201
WO 9624198	P	19960808 WO AK	DESIGNATED STATES CITED IN A PUBLISHED APPLICATION WITH SEARCH REPORT (DESIGNATED STATES CITED IN A PUBLISHED APPL. WITH SEARCH REPORT) CN JP KR US
WO 9624198	P	19960808 WO AL	DESIGNATED COUNTRIES FOR REGIONAL PATENTS CITED IN A PUBLISHED APPLICATION WITH SEARCH REPORT (DESIGNATED COUNTRIES FOR REGIONAL PATENTS CITED IN A PUBLISHED APPL. WITH SEARCH REPORT) AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
WO 9624198	P	19960808 WO A1	PUBLICATION OF THE INTERNATIONAL APPLICATION WITH THE INTERNATIONAL SEARCH REPORT (PUB. OF THE INTERNATIONAL APPL. WITH THE INTERNATIONAL SEARCH REPORT)
WO 9624198	P	19960906 WO DFPE	REQUEST FOR PRELIMINARY EXAMINATION FILED PRIOR TO EXPIRATION OF 19TH MONTH FROM PRIORITY DATE
WO 9624198	P	19961030 WO 121	EP: PCT APP. ART. 158 (1) (EP: PCT ANM. ART. 158 (1))
WO 9624198	P	19970721 WO ENP	ENTRY INTO THE NATIONAL PHASE IN: US 875182 A 19970721
WO 9624198	P	19980318 WO 122	EP: PCT APP. NOT ENT. EUROP. PHASE (EP: PCT ANM. NICHT IN EUROP. PHASE EING.)
WO 9624198	P	19980708 WO 122	EP: PCT APP. NOT ENT. EUROP. PHASE (EP: PCT ANM. NICHT IN EUROP. PHASE EING.)